Statement of Basis for Aquifer Exemption Determination for [Well/Project Name]

Applicant: ***Purpose of Injection:***

State/Agency: ***Contact:***

EPA has reviewed the proposed aquifer exemption and made a determination to [approve/ disapprove/request additional information] on the aquifer exemption request.

Description of the aquifer or portion of aquifer proposed to be exempted:

- *Location*
  - *quarter/quarter, section, township, range*
  - *county*
  - *state*
- *Size of the area proposed for exemption*
- *Depth and thickness of the aquifer*

Information EPA considered about the aquifer portion of aquifer proposed to be exempted:

- *Describe the lithology of the aquifer proposed for exemption, including rock type(s), permeability and porosity.*
- *Describe the orientation and distribution of any faults or fracture/joint systems that transect the exempted aquifer, and how it was determined that these features will/will not act as conduits for fluid migration outside of the proposed exempted aquifer.*
- *Discuss the total dissolved solids (TDS) content of the aquifer, including the TDS at the top and bottom of the exempted zone, and the locations of all samples taken. If the aquifer is contaminated, describe the nature of the contamination.*
- *Describe groundwater flow (i.e., rate and direction) within the aquifer and whether or how this impacts fluid movement toward USDWs or water supplies.*
- *Describe the upper and lower confining zone(s) and how these were identified and characterized. Provide a technical rationale for how vertical confinement from USDWs will be ensured (e.g., low permeability).*
- *Describe all injection and production wells identified within the proposed exempted area, including which (if any) penetrate the proposed exempted aquifer, whether they will/will not act as conduits for fluid movement outside of the exempted aquifer, and how this was determined (i.e., based on well construction/plugging and abandonment records).*
- *Provide a reference/citation or other source (e.g., sampling, site-specific surveys) for all*

of the information presented.

How the size of the exempted aquifer/portion of aquifer was determined:

- *When applicable describe the area over which the **injectate plume** is expected to move and how this was determined (e.g., using a calculated radius, modeling, etc.), what information was used to identify this area, and over what timeframe this movement was evaluated (i.e., the injection timeframe and over how long a period after injection has ceased).*
- *When applicable describe the area over which the **mining activity** is expected to expand and how this was determined (e.g., using a calculated radius, modeling, etc.), what information was used to identify this area, and over what timeframe this movement was evaluated (i.e., the mining timeframe and over how long a period after mining has ceased).*

Water supply needs in the area of the proposed exemption:

- *Identify any aquifers near the proposed injection project that serve as drinking water supplies.*
  - *Describe their distance (laterally and vertically) from the proposed project or well(s) and whether they are hydraulically connected to the aquifer proposed for exemption.*
- *Describe/show all publically- and privately-owned drinking water wells in the area, including their distance from the proposed injection project and whether or not they are producing from the aquifer proposed for exemption.*
  - *Describe whether there is a potential for any of these wells/supplies to be impacted by the proposed injection/mining activity (and how this determination was made).*

Current and future use of the aquifer as drinking water as drinking water source; and alternate water source:

- *Describe/show the population that is served by these wells/water supplies, e.g., names of water systems or communities served and approximate number of people.*
  - *Describe projected trends in population growth within the area over the next 50 years. Include any populations that may rely on the aquifer as alternative water supplies.*
- *Describe surface water use in the area of the proposed aquifer exemption and whether or not the surface water supplies may be impacted by the proposed exemption.*

- *Describe alternate water supplies available to populations in the area of the proposed aquifer exemption.*

- *Explain whether/how it was determined that the USDWs beyond the proposed exempted area will have acceptable water quality (and what this water quality is).*

The aquifer cannot be used as source of drinking water:

- *Describe hydrocarbon and mineral exploitation of the aquifer proposed for exemption, including current activities, history, and planned future use of the aquifer for these purposes.*
- *Identify all active injection wells in the area, including their UIC well class, the purpose of the injection, whether they are injecting into the aquifer proposed for exemption or hydraulically connected aquifers, and how long they have been in operation. Describe the fluid(s) being injected into these wells.*

Additional information about the proposed project:

- *Describe the injection well(s) or project associated with the proposed aquifer exemption, including the purpose of the project (e.g., enhanced oil/gas recovery, in-situ leachate mining), the UIC well class, and the proposed number and location of the well(s).*
- *Describe the nature of the fluid proposed for injection, including its source, TDS, and whether it is hazardous or has hazardous constituents. Describe the mining operation when applicable.*

Describe EPA's determination regarding the proposed aquifer exemption:

- *Summarize the regulations (40 CFR 144.1(g), 146.4, 144.7, and 145.32) and Guidance 34 on which the determination to grant or deny the aquifer exemption request was based.*
- *Identify the specific regulatory criteria at 40 CFR 146.4 under which the exemption is requested.*
  - *Describe the basis for the determination regarding whether to grant or deny the request to exempt the aquifer or portion of the aquifer, including the data and analysis underlying the determination.*
- *Identify the information on which EPA based a determination that the aquifer does not currently serve as a source of drinking water [per 40 CFR 146.4(a)].*

- *Identify the information on which EPA based a determination that the aquifer cannot now and will not in the future serve as a source of drinking water per 40 CFR 146.4(b), including, where applicable.*

- *The information on which EPA based a determination that the aquifer is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible [per 40 CFR 146.4(b)(1)].*
- *The information on which EPA based a determination that the aquifer is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical [per 40 CFR 146.4(b)(2)].*
- *The information on which EPA based a determination that the aquifer is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption [per 40 CFR 146.4(b)(3)].*
- *The information on which EPA based a determination that the aquifer is located over a Class III well mining area subject to subsidence or catastrophic collapse [per 40 CFR 146.4(b)(4)].*

- *Identify the information on which EPA based a determination that the total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/l and the aquifer is not reasonably expected to supply a public water system [per 40 CFR 146.4(c)].*